DOCUMENT RESUME

ED 180 988 SP 015 348

AUTHOR	Morine-Dershimer, Greta
TITLE	Teachers' Conceptions of Pupils--An Outgrowth of Instructional Context: The South Bay Study, Part III. Research Series No. 59.
INSTITUTION	Michigan State Univ., East Lansing. Inst. for Research on Teaching.
SPONS AGENCY	National Inst. of Education (DHEW), Washington, D.C.
PUB DATE	Jul 79
CONTRACT	400-76-0073
NOTE	67p.
AVAILABLE FROM	Institute for Research on Teaching, College of Education, Michigan State University, 252 Erickson Hall, East Lansing, MI ($4.50)
EDRS PRICE	MF01/PC03 Plus Postage.
DESCRIPTORS	Academic Achievement; Cognitive Processes; Decision Making; *Evaluation Methods; *Information Retrieval; Interaction Process Analysis; *Prediction; Student Characteristics; *Student Evaluation; *Teacher Attitudes; Teacher Behavior; Teaching Styles

ABSTRACT

This paper describes the data collection, data analysis, and findings that point to the importance of instructional context as a factor in understanding the concepts teachers use when they process information about pupils in their classrooms, and the predictions they make about pupil success in learning. Three aspects of context are examined: (1) level of immediacy (classroom, school, local community, and larger society); (2) rhythm of change (rapidly shifting factors, periodically shifting factors, and sustained factors); and (3) direction of impact (teacher attitude, teacher information processing, teacher behavior, teacher effectiveness, and teacher change). (JD)

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Research Series No. 59

TEACHERS' CONCEPTIONS OF PUPILS -- AN OUTGROWTH OF INSTRUCTIONAL CONTEXT: THE SOUTH BAY STUDY, PART III

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Published By

The Institute for Research on Teaching
252 Erickson Hall
Michigan State University
East Lansing, Michigan 48824

July 1979

SP 015 348

This work is sponsored in part by the Institute for Research on Teaching, College of Education, Michigan State University. The Institute for Research on Teaching is funded primarily by the Program for Teaching and Instruction of the National Institute of Education, United States Department of Health, Education, and Welfare. The opinions expressed in this publication do not necessarily reflect the position, policy, or endorsement of the National Institute of Education. (Contract No. 400-76-0073)

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Abstract

A year-long study of 10 elementary school teachers was conducted to develop an in-depth description of the organizing concepts used for processing information about pupils. Most of the teachers demonstrated flexibility of concept use, combined with moderate stability and accuracy in predicting pupil success in reading. Teacher conceptions and predictions were responsive to specific aspects of instructional context, including time of year, observational setting, curriculum-management system, and local pupil achievement patterns. Comparison of the findings of this study to those of other studies dealing with the effects of context on teaching led to a conceptualization of "instructional context" that describes three important aspects of context: (1) level of immediacy (classroom, school, local community, and larger society, (2) rhythm of change (rapidly shifting factors, periodically shifting factors, and sustained factors), and (3) direction of impact (teacher attitude, teacher information processing, teacher behavior, teacher effectiveness, and teacher change).

AN INTRODUCTION TO THE SOUTH BAY STUDY[1,2]

Studies of teaching have, for the most part, concentrated on the visible events in classrooms and other places where teaching takes place. Over 100 systems have been developed to record and categorize teacher and student behavior in a variety of ways.[3] The use of these systems has resulted in a growing field of knowledge about the visible behavior of teachers and students as they interact with one another.

Teaching as Behaving: The Visible Acts

The results of inquiries into teaching can be interpreted from several points of view.

One interpretation suggests that extremely strong normative pressures operate to shape teaching behavior. These pressures have great force in the early years of a teacher's career (including the training period).

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[1]This introduction is included, in its entirety, in all four IRT published reports on the South Bay Study: Teaching Styles at South Bay School: The South Bay Study, Part I (Res. Ser. No. 57), K. McNair and B. Joyce; Teachers' Thoughts While Teaching: The South Bay Study, Part II (Res. Ser. No. 58), K. McNair and B. Joyce; Teachers' Conceptions of Pupils: The South Bay Study, Part III (Res. Ser. No. 59), G. Morine-Dershimer; and Teacher Plan and Classroom Reality: The South Bay Study, Part IV (Res. Ser. No. 60), G. Morine-Dershimer.

[2]The researchers in the South Bay Study were Greta Morine-Dershimer of Syracuse University, Bruce Joyce of Brooksend Laboratories, and Kathleen McNair of the California State Department of Education.

[3]See Anita Simon and Gil Boyer (Eds.), Mirrors for Behavior. Philadelphia: Research for Better Schools, for a compendium of instruments.

They move teachers toward what Hoetker and Albrand (1969) have termed a "recitation style"[4] of teaching. This interpretation emphasizes the finding that many teachers appear to use similar approaches (usually variations on the recitation style).

Other researchers have reported that variety in teaching is associated with pupil learning (e.g., Flanders, Note 1), suggesting that those who are not completely co-opted into the recitation style are more effective teachers because their wider repertoire enables them to reach more learners and pursue more goals than those who use only one style.

Dunkin and Biddle (1974) have organized their research somewhat differently, providing a picture of the relationships between variations in teaching style and skill and measures of effectiveness (usually measures of student learning). These authors are generally pessimistic because correlations between measures of teacher behavior and student learning are frequently quite low.

Rosenshine (1971), on the other hand, has taken an optimistic view, emphasizing that a number of studies of certain teaching "skills" report positive correlations with measures of student learning.

Gage (1978) presents research on teaching as a growing base of understanding. He believes that teaching is a complex art which science informs gradually. To expect a few dimensions of teaching to correlate directly and highly with any few measures of pupil learning, he says, belies both its many-sidedness and the state of development of inquiry into it.

Gage's view that teaching is complex, and that concepts describing it will have to reflect that complexity is supported by the findings of

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[4] A style in which the teacher asks questions to elicit knowledge of facts, and the student responds in kind (Hoetker & Albrand, 1969).

several recent studies. For example, McDonald and Elias, Note 2) and Berliner (1976), in separate phases of the same large, long-term investigation, report evidence that clusters or patterns of teacher behaviors may be associated with complexes of variables of student achievement. They suggest that single aspects of teacher behavior are unlikely to be powerful determinants of student learning.

There are still other questions about stability of teaching styles, that is, how consistently teachers behave over time. Medley (1977) has reported that a number of teaching style dimensions are relatively stable (that measures of teaching behaviors at one point in time are correlated with those measures at another point in time). Shavelson (1976), on the other hand, argues that the correlations between aspects of teacher behavior across time are moderate -- too low to permit characterization of teachers in terms of style regularities. We (the South Bay Study researchers) believe that certain aspects of teacher behavior are reasonably stable across time (Medley's position), and that there are probably clusters of teacher behavior which are related to certain aspects of student achievement (McDonald & Berliner's opinion). Research must go a long way, however, before causal relationships can be established between important dimensions of teacher behavior and student achievement, even though knowledge is accumulating.

Teaching as Thinking: The Inner Acts

In sharp contrast to the large amount of research on the observable aspects of teaching behavior is the tiny quantity that has been devoted to the study of how teachers think -- how they process information. What do teachers think about the individuals they interact with? What kinds of decisions do they make? What kinds of information do they receive from the

confusing world of the classroom, and how do they deal with that information? How do teachers plan lessons and units? What constraints do they perceive? How many alternatives do they consider? How do they categorize their students and why?

Most of the tiny group of studies on teacher thinking have not been designed from a naturalistic point of view. Zahorik (Note 3) points out that planning has typically been studied from a prescriptive stance, focusing on ideal models and recommendations rather than how teachers in practice typically prepare for lessons. For example, much research on preactive decision making has assumed that teachers diagnose student learning, develop behavioral objectives, and otherwise follow classic "instructional-systems" models. But naturalistic investigations have indicated that very few teachers actually use such a behavioral analysis in preparing for their lessons (Popham & Baker, 1970).

Fifteen years ago, Joyce and Harootunian (1966), studying the decision-making processes of preservice teacher candidates, discovered that the major decisions were made in relation to instructional materials for children. The teachers' major sources of information about science came from children's literature rather than from adult-oriented books or manuals that accompany the instructional systems prepared by textbook publishers. Scientific knowledge about the kinds of information that teachers use for making "inflight" decisions is almost nonexistent.

Except for the investigations by Clark and Joyce (1979), Crist, Marx, and Peterson (Note 4), and Morine-Dershimer and Vallance (Note 5), there have been almost no studies of information processing during teaching prior to this study. Thus, although *overt* teacher behavior has been subjected to analysis by numerous category systems, there are few ways of classifying the kinds of teacher thinking that go on regularly during the course of teaching. Yet, until the thoughts and feelings which occur

during teaching are explored, the visible observed behaviors may not be understood.

When a teacher asks a question, an observer can record the visible behavior clearly enough without understanding the mind that formualtes the question. However, the result is only a record. Unless the thought behind the utterance is known, little can be known about what caused it. If researchers and educators care to use information about teaching as a basis for improving it, they need to understand *why* teachers behave as they do.

The investigation reported here builds on this limited body of research to explore and try to explain relationships between the teaching styles of a small group of teachers in one school and the types of information those teachers seek and use as they teach.

Relationship to Prior Studies

The South Bay Study builds directly on two prior studies, one directed by Joyce at Stanford University (Clark & Joyce, 1979; Crist, Marx, & Peterson, (Note 4), and one conducted by Morine-Dershimer at the Far West Laboratory for Educational Research and Development (Morine & Vallance, Note 5; Morine-Dershimer & Vallance, Note 6).

The Stanford study examined teacher decision making in a laboratory setting. Twelve teachers taught new instructional units to junior high school students previously unknown to them. They taught each unit to three different groups of eight students each on three different days. Teacher planning (Peterson, Marx, & Clark, Note 7), interactive decision making (Clark & Peterson, Note 8), and teacher judgment of pupils (Marx, Note 9) were all examined in this study.

The Beginning Teacher Evaluation Study (BTES) conducted by the Far West Laboratory examined teacher decision making in a semi-controlled setting. Forty elementary school teachers identified as "more effective" or "less effective" (Berliner, Note 10) taught two lessons based on curriculum content new to them to a randomly stratified sample of pupils from their own classrooms; later, they engaged in some simulated planning tasks. Teacher planning (both short-term and long-term), interactive decision making, teacher judgments of pupils, teacher judgments of other teachers, and pupil perceptions of teachers were all examined.

The Stanford and BTES studies used somewhat different techniques to collect data on teacher decision making, and arrived at complementary findings. The South Bay Study incorporated some data collection procedures from these earlier studies, as well as instituting some new procedures. The similarities and differences are described here to illustrate the continuity of these three studies.

The Investigation of Short-Term Planning

In the study directed by Joyce at Stanford, teachers were given new curriculum materials and a period of time in which to plan a day's unit of instruction. The teachers were asked to "think aloud" as they planned; their oral planning was tape recorded and later coded under categories such as objectives, materials, subject matter, and process. The study's results indicate that teachers spent most of their planning time dealing with content to be taught. The teachers' second largest area of concentration was on instructional processes (teaching strategies and lesson activities). The smallest proportion of their planning time was spent on identifying lesson objectives.

In the BTES, Morine-Dershimer collected teachers' written plans for two lessons in mathematics and reading, both dealing with content provided by researchers and new to teachers. These plans were analyzed

to determine degree of specificity, type of format, amount of attention to goals, pupil readiness, evaluation procedures, and alternative procedures. Teachers tended to be fairly specific in their written plans and used an outline format, but they included very few statements regarding behavioral goals, diagnosis of student needs, evaluation of learning, or possible alternative activities. The "more effective" teachers made more specific statements in their written plans, and mentioned instructional processes to be used more often than the other teachers did.

In the South Bay Study, teachers planned and taught lessons in reading, following the curriculum they normally used, to groups of pupils in their own classrooms. These teachers were interviewed about their plans in the morning before their reading lessons began. They described their general plan, and then answered questions about diagnosis of pupil needs, use of instructional materials, specific lesson objectives, teaching strategy, and seating arrangements. While diagnosis of pupil needs, lesson objectives, and seating arrangements were seldom mentioned in the initial plan statements, teacher responses to probing questions clearly demonstrated that these aspects of the lessons were not being ignored but rather, were part of their "mental image" or set of expectations for the lesson.

The Investigation of Interactive Decision Making

In the Stanford study, interactive decision making was investigated by use of a "stimulated recall" technique. An interviewer showed each teacher four brief (two to three minutes long) videotaped segments of classroom interaction, randomly selected from a 50-minute lesson. After viewing each segment, the teacher answered a series of questions, as follows:

1. What were you doing here?
2. What were you noticing about pupils?
3. Did you have any instructional objectives in mind at this point?

4. Were you considering any alternative actions here?

5. Was there anything in this situation that caused you to behave differently than you had planned?

The principal findings were: (1) teachers considered alternative strategies only when the lesson was going poorly, (2) the primary cue used to judge how well the lesson was going was student participation and involvement, and (3) teachers rarely changed from their planned strategy, even when instruction was going poorly.

The BTES also used a stimulated recall technique to explore interactive decision making. But in this case the entire 20-minute lesson was videotaped and played back to the teacher, who was instructed to stop the tape at any point at which s/he was aware of having made a decision. In addition, the interviewer stopped the tape at a point where a pupil gave an incorrect answer and a point where there was a transition from one activity to another. At each decision point the teacher was asked:

1. What were you thinking about here?

2. What were you noticing that made you stop and think?

3. What did you decide to do?

4. Did you consider any alternatives?

The decision points identified by teachers in this study were related mainly to interchanges (decisions stemming from immediate verbal interaction) or planned activities (interactive decisions stemming from preactive decisions). Teachers focused on instructional process in discussing the substance of their decisions, but shifted to a focus on pupil characteristics when discussing the basis for these decisions. Few alternatives were considered. The "less effective" teachers tended to mention a larger number of items that they were taking into account on almost all aspects of decisions discussed than the "more effective" teachers. That is, they appeared to be attempting to process more information at a given

decision point than the "more effective" teachers.

The South Bay Study incorporated some techniques from both previous studies in conducting stimulated recall interviews, as well as adding some new investigative procedures. A teacher was videotaped during two reading lessons on the same day, one with a high ability group, and one with a low ability group. At the end of the day both lessons were played back to the teacher, first using two random stops for each lesson (as in the Stanford study), then playing the entire lesson back, stopping the tape at teacher-identified decision points (as in the BTES). Interviews were conducted at four different points in the school year, to investigate changes over time. Interactive behavior during lessons was observed and coded to compare teacher decision making with classroom behavior.

The Investigation of Teacher Judgments About Pupils

Teachers in the Stanford study were asked after each new lesson they taught to predict the rank-order of their students in that lesson on a cognitive achievement test and an attitude inventory, which were administered after the third teaching episode. (The students were unknown to the teachers before the lesson, and each lesson was taught to a different group of pupils.) In addition, teachers were asked to describe the student cues they used in making these predictions. The most frequently mentioned cue was "student participation." Regression equations using the behavioral cues identified by teachers were not good predictors of actual student achievement or attitude inventory results. Findings suggested that teacher judgments about student attitudes were more accurate than their judgments about cognitive achievement.

In the BTES, a "pupil sort task" was used to explore teacher judgments about pupils. After teaching two new lessons to their students, teachers were asked to sort their pupils into groups based on something

they had observed about pupils during the lesson. The procedure was repeated until the teacher could think of no new basis for regrouping pupils. The most frequently used basis was pupil participation. The "more effective" teachers generated more groupings using cognitive characteristics as bases for categorizing, and also formed more groups where a pupil was singled out as being too different on a given characteristic to be grouped with other pupils.

The South Bay teachers were interviewed using the pupil sort task at five different points in the school year; this was done to explore changes over time in pupil characteristics being observed. Teachers were asked to predict pupil success in reading three times (September, November, and June). These predictions were compared to pupil performance on standard achievement tests to determine "accuracy" of teacher judgments. The predictions were compared to teacher rankings of pupils on other teacher-identified pupil characteristics to identify the cues used by teachers in making predictions.

The Continuity of Investigation

The three studies can be viewed as a series of investigations which explore a basic set of questions, using somewhat different research settings and data collection techniques. The findings of the first two studies complement and support each other in important ways. The findings of the South Bay Study extend, refine, and throw new light on the findings of the earlier exploratory studies. In addition, the results of the South Bay Study suggest new questions for future research.

The Purpose of the South Bay Study and Background Information

Our major objective in this study was to develop one or more paradigms for viewing the ways that teachers process information, and

to generate and adapt methodologies by which information processing can be studied efficiently and comprehensively. The South Bay Study is essentially a case study of a single elementary school in a large metropolitan area. It focuses on the variety and stability of the information-processing behavior of 10 teachers.

The South Bay School is staffed by 20 teachers, a principal, an assistant principal, and two secretaries; it is served by three specialists who are shared with other schools. The school qualifies for extensive ESEA Title I (federal) and SB 90 EDT (state) funds by virtue of the economic conditions of its neighborhood.

In recent years, state and national funds have resulted in teachers' participation in the selection and purchase of extensive instructional materials, especially in the areas of reading and mathematics. These include self-instructional stations for reading and arithmetic, "concrete aids," "supplementary readers," and a variety of audiovisual materials and "skill-builders."

The 10 teachers who participated in the study teach grades one to five. One of them was male; nine were white and one was black. All 10 teachers had taught for at least three years. Teachers designated as 101, 102, and 103 taught first-grade; Teachers 104 and 105 taught third grade; Teacher 106 taught fourth-grade; Teachers 107 and 108 taught fifth-grade; and Teachers 109 and 110 taught special education.

Study Design and Methodology

The South Bay Study examined three aspects of teacher behavior and thinking:

1. Interactive teaching styles, as revealed by observation of verbal interaction, including an examination of variations between teachers and stability of styles over time.

   "How do the teachers teach?" "How are they similar?" "How do they differ?" "How consistently do they teach?"

2. Thought processes while teaching, as revealed through "stimulated recall" techniques.

   "What do they think about as they teach?" "How similarly (differently?) do they think?" "How consistent are their thoughts over time?"

3. Teacher conceptions of pupils, as revealed by categories used to describe students and predict their behavior.

   "How do they describe the children?" "How similarly (differently) do they perceive the children?" "How (and how well) do they predict performance?

The Investigation of Teaching Styles

Each of the 10 teachers was observed 12 times in the course of the 1976-77 year for a total of 120 observations.

Observers were trained to use a complex category system developed over the years that is sensitive to variations in teaching style and strategy.[5] Data collected were analyzed to describe similarities and differences among teachers and across time, to determine stylistic differences between curriculum areas, and to determine whether the transactions between teachers and students varied with student ability. The purpose of this aspect of the investigation was to develop a picture of the teaching going on in the school, and its stability and variety.

The Study of Information Processing

Altogether, 60 lessons were videotaped as the teachers worked. Each of these tapes was played back to the teacher concerned and s/he was interviewed to recapture the thoughts that were in his/her mind as events occurred during the videotaped episode. The protocols derived from these "stimulated recall" interviews formed the basis for the descriptions of interactive information processing. Analysis of these protocols focused on the content of the recalled thoughts and was structured to determine similarities and differences among the teachers and across time, between subject areas, and between ability groups of students. In addition, we

[5] This system is described in Appendix A of Part I.

attempted to determine relationships between teachers and decision making styles.

We also interviewed teachers to determine their perceptions of their own teaching styles and information-processing behavior. Characterizations were developed of the teaching and information-processing styles of each teacher, and these were reported to the teacher for confirmation or disconfirmation.

Conceptions of Pupils

On five occasions throughout the school year, the teachers were asked to categorize their students and describe the bases they used for observing the children as they worked with them (what cues they used, how they put together those cues to describe the children, and the meaning of these descriptions for their teaching decisions). These data were analyzed to determine normative tendencies, differences between teachers, and the stability of characterizations of the students across time. We also analyzed the data to try to learn how teachers arrived at their characterizations of students, whether or not changes resulted from continued exposure to the children, and the influence of a variety of sources of information about pupils (direct observation, conferences with parents, test scores, etc.).

Organization of the Report

The report of the South Bay Study is organized into four separate papers:

1. The Teaching Styles at South Bay School: The South Bay Study, Part I by K. McNair & B. Joyce. This paper focuses primarily on the general patterns of teaching styles in the South Bay School. The patterns exhibited are those of the "recitation method," or in current parlance, "direct teaching."

2. Teachers' Thoughts While Teaching: The South Bay Study, Part II by K. McNair and B. Joyce. This paper examines teachers' thought processes while teaching. Stimulated recall interviews of teachers were used to obtain data for analysis.

3. Teacher Conceptions of Pupils -- An Outgrowth of Instructional Context: The South Bay Study, Part III by G. Morine-Dershimer. This paper reports the general patterns of teacher processing of information about pupils, including teacher conceptions of pupils and predictions of pupil success. The influence of the instructional context on teacher information processing is highlighted.

4. Teacher Plan and Classroom Reality: The South Bay Study, Part IV by G. Morine-Dershimer. This paper focuses primarily on an analysis of relationships among interactive behavior, interactive decision making, and interactive processing of information about pupils within specific lessons. The influence of the discrepancy between the teacher's expectations and the actual events in the lesson on teacher decision making is illustrated in three case studies.

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Teachers' Conceptions of Pupils -- An Outgrowth of Instructional Context: The South Bay Study, Part III

Greta Morine-Dershimer[1]

As Bruner pointed out (Bruner, Goodnow, & Austin, 1956), the concepts people use to organize their world form the basis for their observations, their thinking, and, most probably, their actions. It is these concepts that make it possible for them to manage the flow of sensory input with which they are constantly bombarded. In studying the information processing of teachers, therefore, researchers must examine the concepts teachers use to organize their observations of pupils, for these concepts form the basis of teachers' thinking, problem solving, and decision making about pupils.

In the South Bay Study, Joyce, McNair, and I interviewed 10 teachers periodically over a school year to develop an in-depth description of their conceptions of pupils. The findings suggest that teachers' organizational concepts were neither rigid nor unchanging. Instead, they exhibited an ability to use a range of concepts to organize their observations of pupils. Furthermore, the concepts they used, as well as their predictions for pupil success, appeared to be responsive to the instructional context in which their observations occurred.

The specific aspects of instructional context that seemed important in helping to shape teacher conceptions of pupils were (1) time of year, (2) observational setting, and (3) curriculum-management system. There were distinct shifts over time in the types of categories the teachers used to describe their pupils. There were also clear shifts in the types

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[1]Greta Morine-Dershimer, formerly with the Far West Laboratory, is now a professor in the School of Education at Syracuse University.

of categories used in different observational settings (i.e., general observations vs. observations in specific lessons). Although these variations existed, individual teachers exhibited some stability in the types of categories formed. These patterns of stability are interpretable, at least in part, in terms of characteristics of the curriculum-management system used by the individual teachers. Thus, teacher conceptions of pupils appear to be embedded in an instructional context.

The contextual factors that were important in shaping teachers' predictions of pupil success were (1) the curriculum-management system and (2) local pupil achievement characteristics. Teacher predictions of success were not strongly related to their categorizing of pupils with regard to other characteristics, *except* for those characteristics viewed as essential for success in the particular curriculum-management system operating in a given classroom. Predictions were rather unrealistic when viewed from the perspective of national achievement test norms but were realistic in relation to achievement test norms established by the local school district. Teacher predictions also appeared to be shaped by the instructional context.

This paper describes the data collection, data analysis, and findings that point to the importance of instructional context as a factor in understanding the concepts teachers use when they process information about pupils in their classrooms, and the predictions they make about pupil success in learning.

Data Collection

The principal source of data was a categorizing task called the "pupil sort task" (Morine & Vallance, Note 1). This task was administered to teachers at five times during the school year:

1. at the end of the first day of school in September;

2. shortly after teachers received pupils' diagnostic reading test scores in November;

3. in January, directly following a reading lesson;

4. in March, directly following a reading lesson; and

5. in late May, shortly before the end of school.

On each occasion, teachers were interviewed individually by one of the three researchers. Each teacher was presented with a deck of 3 x 5 cards, and on each card was written the name of a pupil in their class. Interviews were conducted as follows:

> Interviewer: We're interested in the kinds of things that you have been observing about pupils (during the first day of school; during these opening weeks of school; during this reading lesson that you just taught; during the past school year).
>
> Could you take these cards and group the pupils, putting together the names of pupils you think behaved or responded in similar ways? You can have as many groups as you like and as many names in a group as you like. I will be audiotaping your comments so that I don't have to take too many notes. Any questions?
>
> After the teacher completed each sort, the interviewer asked:
>
> a. How are the children in each group similar? Please describe each group's characteristics.
>
> b. How are the subgroups different from each other?
>
> c. Can you think of another way that you might divide these pupils into subgroups? Are there some other kinds of behavior that you noticed? Try putting them together in a different way.
>
> This procedure continued until the teacher couldn't think of any new groupings. Finally the interviewer said:
>
> We're also interested in your estimations of pupil success in reading. Could you group the pupils one more time according to (September and November) your predictions of the success they will have in reading this year; (January and March) your estimation of the success they had in the reading lesson today; (May) your predictions of the success they will have in reading next year?

The interviews were taped, and the interviewer took detailed notes.

Data Analysis

The steps in data analysis for this aspect of the study included:

1. Developing and refining coding systems to describe teacher responses;
2. coding of responses by two independent coders;
3. checking inter-coder reliability and obtaining coder agreement on disputed items;
4. analyzing coded responses for each task to identify teacher similarities and differences;
5. identifying shifts in teacher responses over time; and
6. relating this study's findings about teacher conceptions of pupils to findings in the Beginning Teacher Evaluation Study (BTES).

Developing and Refining Coding Systems

A system for categorizing teacher responses to the pupil sort task developed in the earlier BTES was refined for use in this study. Two independent coders coded each teacher response to the pupil sort task. Initial agreement of these two coders was .77 for coding content of the categories, .43 for coding structure of the categories, and .85 for coding valence of category labels. Where coders disagreed (chiefly in coding the structural aspect of "unique" categories -- those peculiar to one teacher), the coding was discussed and a mutual agreement reached.

Analysis of Similarities and Differences Among Teachers

When all teacher responses had been coded, I examined the data to identify general and individual patterns of responses on all tasks, as well as changes over time in teacher responses to the pupil sort task. Because this was a descriptive study, the basic statistics used were frequencies, means, and percentages. I made no attempts to differentiate teachers on

the basis of teaching effectiveness, and no tests of statistical significance were made.

Results

Teacher responses to the pupil sort task were analyzed according to content, logical structure, and valence. Each of these areas will be discussed in turn.

Content of Teacher Conceptions of Pupils

When categorizing pupils on the basis of their observations, teachers used six different types of pupil characteristics. These were, in order of frequency used: *(1) ability/achievement, (2) involvement in instruction*, (3) *personality*, (4) *peer relationships*, (5) *activity orientation*, and (6) *growth/progress*.[2]

The content of teacher conceptions of pupils shifted over time in ways that were consistent with teachers' changing tasks. In September, when teachers were just getting to know their pupils, they focused on pupil personality (23% of all categories formed). In November, when they were well into the instructional program, they focused on pupil involvement in instruction (22% of categories formed). In June, as they looked back over the year and evaluated the results of their efforts, they focused on pupil growth/progress (15.6%) and on peer relationships (15.6%), that is, on both the cognitive and social development of the pupils with whom they had been working. Thus teacher conceptions of pupils were responsive to the contextual factor of time of year. At no point in the

[2]In addition, an interviewer-initiated characteristic of predicted (or observed) success in reading was used by teachers on each occasion that the pupil sort task was administered. These categories are defined in Appendix A.

year was pupil ability/achievement a dominant characteristic for teachers in their organization of information about pupils (3% of categories in September, 5% in November, and 12.5% in June).

Shifts in teacher focus over different observational settings were also evident when the content of teachers' general observations of pupils (in September, November, and June) was compared to the content of their observations of pupils in specific reading lessons (in January and March). The evidence demonstrates that teachers tended to focus on different pupil characteristics in different observational settings.

By far the most marked difference was the heavy teacher use of the activity orientation in specific lessons compared to the total absence of use of this category in general observations. Pupil personality and peer relationships were important factors in their general observations of pupils (17.5% and 10.7%, respectively). Pupil ability and the activities in which pupils were engaged were important factors in teachers' observations of pupils in specific lessons (16.1% and 17.7%, respectively). Pupil involvement in instruction was an important factor in both types of settings (15.5% general; 16% specific).

A schematic summary of individual teacher similarities and differences in content focus is presented in the Figure. This figure shows that pupil personality and/or pupil involvement in instruction provided a central focus for most of the 10 teachers.

The differences in teacher focus appear to have some relationship to the curriculum-management systems in operation in their classrooms.

For example, Teacher 103 had created a curriculum-management system that was highly complex. Students did a great deal of independent work,

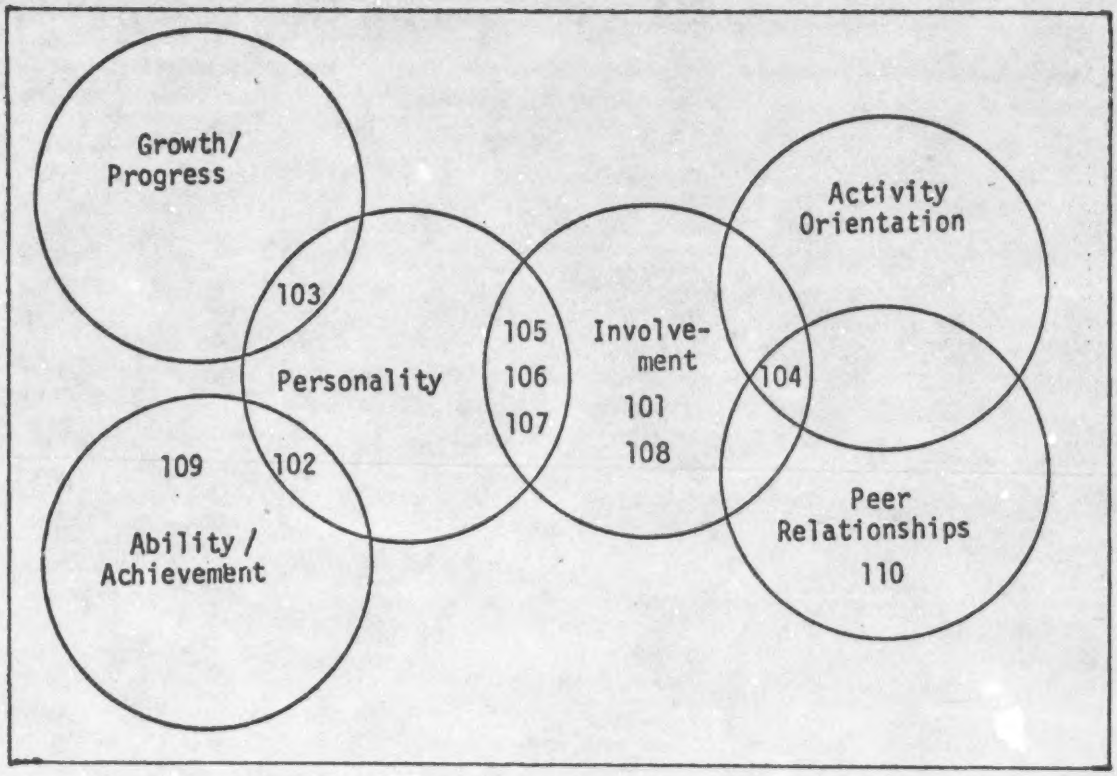

Figure: Content of Teacher Conceptions of Pupils: A Schematic Summary of Similarities and Differences in Teacher Focus. (Each number represents one of the 10 participating teachers.)

choosing from among a variety of optional activities and progressing at their own rate. To keep this system functioning, the teacher had to be (and was) very aware of pupil personality factors such as self-direction, and also had to be alert to evidence that pupils were or were not continuing to develop new skills and concepts (pupil growth/progress).

Teacher 109, on the other hand, was working with a group of mentally retarded children. Her chief instructional goal was to assist these children in achieving a minimal competency in reading. Thus, she was highly attuned to each individual child's ability and achievement levels.

Teacher 101 had chosen to use individualized instruction in reading.

Pupils worked alone on materials the teacher selected. For this curriculum-management system to be effective, it was essential that pupils attend to their assigned tasks, so it was necessary for the teacher to be aware of pupil involvement in instruction.

These examples illustrate the general finding that *the focus of individual teachers on particular types of pupil characteristics is related to the type of curriculum-management system used.*[3]

Logical Structure of Teacher Conceptions of Pupils

Three types of groupings used by teachers in the pupil sort task deserve special mention. These groupings, which exemplify teachers' logical approaches to the task, have been named "unique label" categories, "mixed breed" categories, and "singling out" categories (see Appendix A for definitions).

There were some changes over time in frequency of teacher use of all three special grouping types. The most prominent shift for all three occurred from September to November. Mixed breed categories were only formed in September (13.3% of all categories formed) and November (2.4%), and the November occurrence involved only one grouping by one teacher. Teacher use of singling out groupings was very high (50% of all categories formed) in September, but it dropped markedly in November (20%) and stayed about the same in June (19.5%). Teacher use of unique label categories was limited in September (5.5%), increased in November (18.5% , and dropped again in June (9%). These shifts in teacher use of the three groupings suggest that the logical structure of teacher conceptions of pupils is responsive to the different conditions existing at different points in

[3]Corroborative detail relative to the findings on content of teacher conceptions of pupils is presented in Appendix B, through an examination of one particular case.

the school year, with particularly strong effects noted on the first day of school when the children were new to the teachers and, therefore, only limited information was available.

When the special effects of the first school day are removed, a more accurate assessment can be made of the effect observational setting has on the logical structure of teacher responses to the pupil sort task. Considering November and June as examples of teacher responses based on general observations of pupils, and January and March as examples of responses based on observations from specific lessons, the data show that there was little difference in use of unique label categories in the two situations (13.7%, general; 12.9%, specific). There was some tendency for teachers to single pupils out more when they grouped on the basis of specific lessons (19.1%, general; 27%, specific), but this was not a strong difference. In general, there was less shift over time and over observational setting in the *logical structure* of teacher responses to the pupil sort task than there was in the *content* of teacher responses.

Three aspects of the logical structure of teacher conceptions have been examined in detail. These are *logical consistency, singling pupils out*, and *focus and variation in category use*.

The degree of logical consistency exhibited by teachers was determined by two factors: (1) whether or not a teacher formed unique label categories that were consistent in substance with each other or with the standard categories formed by that teacher, and (2) whether or not a teacher formed a mixed breed category.

Teacher tendency to single pupils out was determined by the number of occasions on which a teacher formed a subgroup of a single pupil, and by the number of pupils who were singled out over the course of the year.

Teacher patterns of focus and variation in category use were determined by teacher tendency to form several groupings over time in a single category area (focus), and to use several different category areas (variation). The concept of focus and variation in category use is akin to a concept of "process ability" defined by Schroder, Karlins, and Phares (1973), who suggest that for information processing to be effective, teachers need to use a *breadth* (i.e., range or variation) of categories as well as to demonstrate some *depth* of information (i.e., focus or emphasis) in a given category area.

Six teachers showed a great deal of similarity to each other in their tendency to display both focus and variation in category use, to exhibit logical consistency in their categories, and to single pupils out rather infrequently in their groupings. This pattern can be characterized as flexibility of concept use.

Four teachers stood out as different from the main group. (Three of these four teachers were also different from the larger group in terms of the curriculum-management systems they implemented. These teachers all worked in highly individualized settings, and most of their interaction with pupils was on a one-to-one basis.) These four teachers displayed less logical consistency and less focus or variation in category use than the other six teachers. They also used singling-out groupings more frequently. This pattern of logical structure can be characterized as a rigidity of concept use.

Note that this more rigid pattern of concept use occurred with all three of the teachers who worked in highly individualized instructional settings. The information-processing demands on the teacher are necessarily greater when the teacher is interacting with and attempting

to perceive each child as an individual. In trying to deal with the increased amount of information about each pupil which the individualized instructional setting makes available, it may be necessary for the teacher to control the flow of information by restricting the types of information perceived. Thus, a more restricted set of concepts is used through which to view the world of the classroom.

In any event, the patterns of teacher difference in logical structure displayed in this study suggest that *the logical structure of teacher conceptions of pupils is responsive to the curriculum-management system in which the teacher operates, and that individualized instructional settings may help to shape teachers' concept formation in particular ways.*[4]

Valence of Teacher Conceptions of Pupils

The labels that teachers used in distinguishing between pupil groups they formed during the pupil sort task can be categorized by valence (positive, neutral, or negative) as well as by content (type of pupil characteristic identified).

There were clear shifts in teacher patterns of labeling over time with regard to valence. The general pattern from fall to spring was that negative labeling peaked in November, then decreased; neutral labeling increased steadily over the year; and positive labeling remained fairly stable. This pattern suggests that the contextual factor of time may be important in helping to shape the valence of teacher conceptions of pupils.

There was also some variation in the valence of teacher responses to the pupil sort task across different observational settings. The overall pattern was that most pupils were labeled positively in both general and

[4] These findings are illustrated in Appendix C by an examination of one teacher's responses to the pupil-sort activity.

specific observational settings, but the positive labeling was much greater in the specific observational settings. This pattern suggests that the valence of teacher conceptions of pupils is somewhat responsive to observational setting.

There were also individual differences in valence of teachers' conceptions of pupils. Five teachers were predominantly positive in their labeling of pupils, three were predominantly neutral, and two were predominantly negative. Interestingly enough, it was the special education teachers who were predominantly negative in their labeling of pupils. The pupils of these teachers differed sharply from the norm in their intellectual, social, and physical development. Thus the terms that these teachers used to describe these pupils have generally negative connotations in the educational system as a whole, although the teachers themselves may not view their pupils as negatively as their labels suggest. The other teachers who displayed similarity in patterns of labeling did not appear to be as strongly similar in the curriculum-management systems they implemented as were the special education teachers.

This finding suggests that *the valence of teacher conceptions of pupils may be somewhat responsive to the contextual factor of the curriculum-management system the teacher uses, particularly with regard to the type of pupils who are the teacher's fellow participants within that system.*[5] In general, *the valence of teacher conceptions of pupils showed less responsiveness to the instructional context than did the logical structure and the content of their conceptions.*

[5]The general pattern of valence of teachers' conceptions is illustrated in Appendix D in an examination of one teacher's responses.

A Composite View With Additional Evidence From the BTES

When the data regarding the content, the logical structure, and the valence of teacher conceptions of pupils are viewed together, the differences in amount of responsiveness to factors of instructional context become clear. The content of teacher conceptions appeared to be responsive to all three contextual factors: time, curriculum-management system, and observational setting. The evidence from this study suggests that logical structure was responsive to the contextual factors of time and curriculum-management system, but only minimal shifts occurred in relation to observational setting. The valence of teacher conceptions clearly shifted over time, but demonstrated much less responsiveness to curriculum-management system or observational setting.

Time of year appeared to be the strongest contextual factor, for shifts over time occurred in all three aspects of teacher conceptions of pupils: content, logical structure, and valence. Both content and logical structure appeared to be responsive to the contextual factor of curriculum-management system, while only the content of categorical thinking demonstrated a clear shift in relation to observational setting. Generally, teacher conceptions of pupils were responsive to the instructional contexts within which they were formed.

Further evidence to support the thesis that teacher conceptions of pupils are embedded in the instructional context within which they are formed is provided by data from the earlier Beginning Teacher Evaluation Study (BTES) (Morine & Vallance, Note 1). This study was conducted with 40 teachers in a variety of school districts throughout California. These 40 teachers formed a "known sample" from a larger group of 200 selected to demonstrate differences in teaching effectiveness as measured by pupil gain scores in special two-week Experimental Teaching

Units in reading and math. Teachers in the BTES were interviewed using the same pupil sort task that was used in the South Bay Study. (See the special introduction to this paper for more details.)

The general responses of both the BTES teachers and the South Bay teachers to the pupil sort task showed basic similarities. The differences that occurred can readily be interpreted in relation to differences in the contextual factors of observational setting and instructional system.

The two administrations of pupil sort task in the BTES were both based on specific lessons that had just been taught, one in reading and one in math. Thus the pupil sort interviews in the BTES were quite similar to the January and March interviews in the South Bay Study, which provided the examples of teacher responses in a specific observational setting.

Several of the findings in the BTES correspond to findings in the South Bay Study.

For example, *involvement in instruction* was an important pupil characteristic for teachers in both studies. In the BTES it received the most emphasis of any category (39% of the total groupings). In the South Bay Study, it was a category of emphasis over time for six of the 10 teachers, and it was stable across observational settings (15.5%, general; 16%, specific).

Pupil ability/achievement was also a moderately important pupil characteristic in both studies. In the BTES, where categorizing was based on observations in specific lessons, it ranked third in teacher emphasis (15% of the groupings). In the South Bay Study, it also received emphasis in the specific observations (16% of the groupings), though not in the general observations.

Pupil personality is a pupil characteristic that received very little emphasis in the specific observations of teachers in the South Bay Study (9.5% of the groupings); it also received little emphasis in the observations (all specific lessons) of the teachers in the BTES (7%).

One clear difference between teacher responses in the two studies appears to be related to a difference in the observational setting. The category of *pupil behavior* (in the sense of needing discipline) received strong emphasis in the BTES (15% of the categories formed), while this category was virtually ignored by teachers in the South Bay Study. The one teacher grouping in the South Bay Study that would fit most appropriately into this category was coded as a unique label category, because pupil behavior was mentioned so infrequently by the South Bay teachers. The difference in emphasis on pupil behavior may stem from the fact that teachers in the South Bay School were accustomed to classroom observers and videotaping of lessons prior to the advent of the study, and were more relaxed about the impression they and their pupils might be making on the observer/interviewer. For teachers in the BTES,on the other hand, having classroom observers and videotaping of lessons were new experiences, and they tended to show concern about the impression they and their pupils were making. Thus the difference in emphasis on pupil behavior can be interpreted as responsive to a difference in the context of the observational setting, with teachers in the BTES tending to observe their pupils through what they perceived to be the eyes of the unfamiliar classroom observer/interviewer.

A major difference between the circumstances under which data were collected in the two studies was familiarity of curriculum. Teachers in the South Bay Study were teaching lessons based on familiar curriculum materials of their own selection to homogeneous groups of pupils, also of

their own selection. Teachers in the BTES were teaching lessons based on new curriculum materials provided by researchers to heterogeneous (randomly stratified) groups of pupils selected by researchers. The instructional systems within which teacher categorizing of pupils occurred in the South Bay Study were clearly less controlled than those in the earlier BTES. One difference in category emphasis in the two studies can be interpreted as related to this difference in the contextual factor of instructional system. Pupil comprehension was a category that received strong emphasis in the BTES (22% of groupings formed). References to pupil comprehension occurred infrequently in the South Bay Study. When pupil comprehension was mentioned, it was in relation to pupil response to a specific task within the lesson and was coded within the activity orientation category.

The difference in emphasis on pupil comprehension may stem from the fact that because teachers in the South Bay Study were discussing lessons that were part of the regular curriculum flow and were working with homogeneous pupil groups, they tended to expect most pupils to understand the material being covered in the lesson and did not differentiate frequently among pupils on this basis. Teachers in the BTES, on the other hand, were discussing lessons outside the normal curriculum flow and were working with heterogeneous groups, so they tended to be concerned about pupil comprehension of the unfamiliar material, they expected pupil differences, and they differentiated among pupils on that basis. Thus this difference in category emphasis can be viewed as an example of the responsiveness of the content of teacher conceptions to the contextual factor of the instructional system.

Another interesting comparison of findings between the two studies is related to the types of grouping that differentiated teachers with

high and low pupil gain scores in the BTES. Teachers with high pupil gain scores generated significantly more instances of singling out ($p < .05$) and groupings with cognitively-oriented bases ($p < .01$) than did teachers with low pupil gain scores. Teachers with high pupil gain scores used pupil performance on a task within a lesson as a basis for grouping more frequently than teachers with low pupil gain scores, and this difference approached significance. Teachers with high pupil gain scores generated unique label and episode-related groupings more frequently than teachers with low pupil gain scores; this difference was a strong trend, but not statistically significant.

In the South Bay Study, it was apparent that singling pupils out, using cognitively-oriented bases for grouping (e.g., pupil ability/achievement), using pupil performance on a task as a basis for grouping (i.e., activity orientation), and using episode-related groupings were all patterns that were responsive to the observational setting. Each of these types of categories occurred more frequently when teachers grouped pupils on the basis of their observations in a specific lesson than they did when teachers grouped pupils on the basis of their general observations.

Of all the types of responses which differentiated between teachers of high and low pupil gain scores in the BTES, only the use of unique label categories did not appear to be responsive to the observational setting in the South Bay Study. Teachers in the South Bay Study used unique label categories with about the same frequency in both specific and general settings. This comparison of findings from the two studies suggests the possibility that teachers may be differentially responsive to observational setting in their conceptualizing about pupils; that is, more effective teachers may show more change than less effective teachers in the content and logical structure of their responses to

the pupil sort task when the setting varies from general observations about pupils to observations in specific lessons. This is a possibility that would be interesting to investigate further, particularly since the evidence from the South Bay Study suggests that teacher conceptions of pupils are generally less responsive to the contextual factor of observational setting than to the factors of time and instructional system.

To summarize, several of the findings of the South Bay Study are consistent with findings in the earlier BTES. Where differences in findings occur, they seem to be interpretable in light of differences in the instructional contexts in which data were collected. Thus the data from the BTES tend to support my thesis that teacher conceptions of pupils are responsive to and embedded in the instructional contexts within which they are formed.

Teacher Predictions of Pupil Success

One very important aspect of teacher conceptions of pupils is teacher predictions of pupil success. Research has demonstrated that teacher expectations are related to teacher effectiveness (Brophy & Evertson, 1976; McDonald & Elias, Note 2). The South Bay Study provided an opportunity to examine relationships between teacher predictions (expectations for success) and teacher processing of information about pupils, as well as relationships between teacher predictions and pupil achievement.

The teachers in the South Bay Study were willing to predict pupil success in reading as early as the first day of school, and thereafter several times during the year. These predictions were fairly stable over the school year, and teacher ratings of pupils were fairly accurate when compared to pupil performance on spring achievement tests.

Teacher predictions of pupil success were not strongly related to

teacher categorizing of pupils on other characteristics, *except* with regard to characteristics deemed important by the individual teacher for productive functioning in his/her classroom. Predictions of pupil success were rather unrealistic when viewed from the perspective of national achievement test norms, (e.g., teachers predicted that 35% of their pupils would be "successful" in reading, while only 25% actually scored above the 60th percentile in spring reading achievement tests), but their predictions did seem realistic in relation to the *local* achievement norms established by the school district on the basis of several years of testing (e.g., 40% of the pupils scored above the 60th percentile on district norms in spring reading achievement tests). Thus these teachers' expectations for pupil success appeared to be predicated on what might be termed their perceptions of the "situational realities": (1) the characteristics essential for effective pupil functioning in a particular classroom; and (2) the patterns of pupil achievement in a particular community. These situational realities are important aspects of the instructional context in which the teacher operates.

As described in the previous section on data collection, we obtained teacher predictions of pupil success from the "pupil sort task." In September and November, at the conclusion of the pupil sort task, we asked teachers to group the pupils according to their predictions of pupil reading success for the year. In June, they were asked to group pupils according to their predictions of success for the following school year. The Metropolitan Achievement Tests in reading and mathematics were administered by teachers to all pupils in the school in October and again in April. Those test scores were used to compare teacher predictions of pupil success in reading with actual pupil performance.

Prior knowledge of pupils. We were surprised to find that 41% of the pupils were known to the participating teachers prior to the first day of school. This may be because the school has a fairly stable pupil and teacher population. The number of pupils entering or leaving a classroom during the course of the school year ranged from five to 10, with a mean of seven pupils per classroom. Nine of the 10 teachers in this study had taught at the South Bay School for three years or more, and the one teacher new to the school at the time of the study had worked in the district for several years before joining the South Bay staff. The teachers had prior contact with 17% of their entering pupils in an instructional setting such as summer school. Siblings of 83% of the children had previously been pupils of these teachers. This prior experience with the incoming pupils and their families probably contributed to the teachers' willingness to make early predictions about reading achievement.

Stability of teacher predictions. An analysis of the relationships between a teacher's grouping of pupils on the basis of predicted reading success on two separate occasions showed that in 41% of these paired groupings there was a strong tendency for pupils to be rated the same on both occasions.

To obtain a clearer picture of the degree of relationship between two different groupings, I computed contingency coefficients for each teacher describing the degree of relatedness between September and November predictions, September and June predictions, and November and June predictions. For six of the eight teachers who made predictions of reading success on all three occasions, there was a higher degree of relationship between the November and June predictions than between

the September and June predictions. Two teachers had about the same degree of relationship between both of these pairs of groupings. Two others had low coefficients for both of these pairs, because due to interviewer oversight their June groupings were not actually predictions of reading success, but of pupil growth and general success, respectively. These data indicate that teacher expectations for pupil success in reading changed somewhat between September and November, as teachers were getting acquainted with pupils, but stabilized between November and June.

Relationship of predictions to other pupil characteristics. Analysis revealed that only 22% of the groupings based on predicted reading success were related to other types of grouping; that is, there was not a strong tendency for pupils to be rated the same on two different characteristics. An overall "halo" effect was *not* strongly evidenced by these teachers.

However, teacher predictions of pupil success in reading *were* related to their ratings of pupils on characteristics deemed important for effective functioning within a given classroom. I computed contingency coefficients describing the degree of relationship between teacher predictions of reading success and teacher conceptions of "important" pupil characteristics. For each teacher, the September and November groupings based on the pupil characteristic receiving most emphasis by that teacher over the course of the year were compared to predictions of success made at the same point in time. (As was demonstrated in the first section of this paper, the pupil characteristic emphasized by the individual teacher was an outgrowth of the particular curriculum-management system used by that teacher.) Where a teacher did not form a grouping in his/her category of emphasis in September or November, no comparison was made. The data in Table 1 demonstrate that there were relationships between teacher expectations for pupil success in reading

Table 1. Teacher Predictions of Reading Success: Relationships to "Important" Pupil Characteristics

Teacher	Emphasized Pupil Characteristic	Time of Grouping Sept.	Nov.
101	Involvement in Instruction	.71	
102	Personality (outgoing vs. shy)	.56	
103	Personality (Sept.:self-direction) (Nov. :self-confidence)	.70	.68
104	Involvement in Instruction	.57	
105	Personality (outgoing vs. shy)	.68	.57
106	Personality (Sept.:talkativeness) (Nov. :happiness)	.39	.56
107	Personality (outgoing vs. shy)	.63	.65
108	Involvement in Instruction		.73
109	Ability/Achievement	.76	.83
110	Peer Relationships	.61	.67

and teachers' characterizations of pupils on the basis of other qualities they considered to be important. The degree of relatedness was somewhat less than that discussed earlier, where predictions at two points in time were compared, but not markedly so. Teachers were somewhat less apt to rate the same pupil as high (or low) on two different characteristics at the same point in time (e.g., predicted reading success and involvement

in instruction in September) than they were to rate the same pupil as high (or low) on the same characteristic at two different points in time (e.g., predicted reading success in September and June). But most teachers tended to see relationships between what they considered to be important pupil characteristics and the probability of pupil success in reading.

Accuracy of teacher predictions. The relationship between teacher predictions of pupil success in reading and actual pupil performance is examined in Table 2, where teacher predictions in September (after the first day of school) and again in November (after teachers had worked with children for two months) are compared to pupil performance on the reading portion of the Metropolitan Achievement Tests administered by teachers in April.

Table 2: Comparison of Teacher Predictions with Pupil Performance on April Achievement Tests (Contingency Coefficients)

Teacher	September Predictions	November Predictions
101	.80	.64
102	.48	.66
103	.53	.66
104	.66	.77
105	.65	.68
106	.65	.68
107	.58	.73
108	.42	.55

In predicting reading success, teachers placed pupils in one of five groups: very successful, successful, average, unsuccessful, and very unsuccessful. On the Metropolitan Achievement Tests, pupils were ranked according to their quartile placement, based on national test norms. Scattergrams were constructed using these two bases, and the contingency coefficients presented in Table 2 were calculated from these scattergrams.

The teachers were fairly "accurate" in predicting pupil performance, even on the first day of school in September. However, the contingency coefficients in September are not high enough to suggest that teacher predictions about lack of success foreordained pupil failure. In fact, teachers tended to avoid placing pupils in the "very unsuccessful" group. Of the 170 pupils for whom both September predictions and April achievement data are available, only 15 were predicted to be "very unsuccessful." By contrast, 45 pupils were predicted to be "very successful."

Teacher 101, who showed a remarkable degree of accuracy in comparison to other teachers, achieved this by choosing to make predictions for only 12 of the 25 pupils in the class, while other teachers made predictions for almost all their pupils.

The November predictions were more accurate than the September ones for all teachers except Teacher 101. It is interesting to note that while teachers had received diagnostic test data on pupils shortly before the November interviews, they did not generate any groupings based on these data, and when questioned they indicated that they had not yet looked at the data. Apparently, the increased accuracy of the November predictions was a result of the teachers' interaction with their pupils over a two-month period.

Type of predictive error. Teacher reluctance to predict lack of success for pupils, and optimism about the number of pupils who would be very successful in reading, is illustrated further in Table 3. Teachers "erred" in their predictions about pupil success primarily by predicting success for pupils who actually scored in the lower two quartiles in the May achievement tests. In contrast, very few pupils who were predicted to be unsuccessful actually scored in the upper two quartiles in spring achievement tests. In general, then, teacher error was in the direction of overrating rather than underrating.

Table 3: Type of Error in Teacher Predictions

	September		November	
Teacher	% Pupils Predicted High, Scored Low	% Pupils Predicted Low, Scored High	% Pupils Predicted High, Scored Low	% Pupils Predicted Low, Scored High
101	08	08	08	00
102	15	00	19	00
103	15	04	03	03
104	13	07	05	05
105	15	04	07	00
106	35	00	13	00
107	17	00	15	00
108	24	05	19	19

The number of pupils predicted to be successful on the two occasions was almost identical (71 in September and 69 in November), but there was some shift in *which* pupils were predicted to be

successful; this shift appears to account for the increased accuracy of teacher predictions in November.

Teacher predictions and achievement test norms. The over-optimism of the South Bay teachers is examined further in Table 4, where teacher "errors" in predicting success are broken down to compare pupil achievement based on national test norms with pupil achievement based on local district test norms, developed over several years of testing. For six of the eight teachers, the error rate drops markedly when actual pupil achievement is defined in terms of local district test norms. It is clear that when these teachers predicted pupil success in reading, they defined success in the context of local probabilities. By local norms, the South Bay teachers were not unrealistic in the general pattern of their predictions for pupil success.

Table 4: Errors in Teacher's September Predictions: National Performance Norms vs. Local Performance Norms

	% Pupils Predicted High, Scored Low		Total Error Rate	
Teacher	According to Nat'l. Norms	According to Local Norms	According to Nat'l Norms	According to Local Norms
101	08	08	16	24
102	15	08	15	08
103	15	08	19	06
104	13	00	20	07
105	15	04	19	08
106	35	00	35	00
107	17	00	17	04
108	24	19	29	38

The Meanings of Context

I have focused on the apparent effects of what has been termed "instructional context" on teacher information processing, specifically on the processing of information about pupils. The factors of instructional context I identified included: time of year, observational setting, curriculum-management system, and local pupil achievement characteristics. How can these findings be related to other research dealing with the effects of context on teaching?

It is impossible to relate the findings of the South Bay Study to other research on the context of teaching without comparing and contrasting the various meanings of context being used. The first application of the South Bay Study findings, then, is an attempt to further conceptualize the meanings of context.

There are at least three levels of immediacy of context referred to in recent studies: *the classroom level* (Brophy & Evertson, Note 5); *the school level* (Stallings, Cory, Fairweather, & Needles, Note 3; Hall, Zigarmi, & Hord, Note 4); and *thelevel of the larger society*, including state, national, and international levels (Wallace, Note 6). The curriculum-management system, an important contextual factor identified in the South Bay Study, is a classroom level factor at the South Bay school, since teachers have some freedom to choose the specific curriculum-management system they will use.

Another important contextual factor for the South Bay teachers was local pupil achievement patterns. This suggests that another context level needs to be considered, i.e., the local community level. It would seem probable that factors in the more immediate levels of context (e.g., the classroom) would have mor immediate and direct effects on teaching and teacher information processing than those at more distant

levels (e.g., the national society), but future research could be designed to examine this question further.

Another aspect of context referred to in recent studies is the "rhythm" (or speed) of change. Some classroom contextual factors mentioned in the Brophy and Evertson study (Note 5) shift minute by minute (e.g., teacher0 initiated vs. student-initiated contacts) or hour by hour (e.g., reading vs. math), while others are sustained, for the teacher, at least, over several years (e.g., first grade vs. fifth grade). School level policies such as the variable grading systems mentioned by Stallings, et al. (Note 3) are typically sustained for several years, while the societal level factors referred to by Wallace (Note 6) may be sustained for a decade or more. In the South Bay study the contextual factor of time of year shifted periodically, while the factors of curriculum-management system and local achievement patterns were sustained over several years.

It would seem logical that rapidly shifting contexts would yield rapidly shifting effects, while sustained contexts would yield sustained effects. For example, for the South Bay teachers the sustained factor of curriculum-management system was realted to a long-term information-processing focus on certain pupil characteristics, while the shifting factor of time of year related to shifting emphases (pupil personality in September; growth and progress in time). If this had not been the case, these factors could have been interpreted to be rather weak contextual factors. Future research might attent to the "rhythm" of context as a means of eventually devising methods for measuring the "strenght" of a contextual factor.

Direction of impact is another aspect of context referred to in recent studies. Brophy and Evertson (Note 5) are concerned with the impact of context on teacher behavior and teacher effectiveness. Both

Stallings et al (Note 3) and Hall et al. (Note 4) speak to the impact of context on teacher change, and Hall et al. refer also to impact on teacher attitude. The South Bay Study investigated the impact of context on teacher thinking, or information processing. Further research is needed on the impact of context on each of these teacher variables, as well as on the linkages between and among them.

Based on this preliminary conceptualization of the context of teaching (or "instructional context"), the South Bay Study can be characterized as pertaining to the classroom and local community levels of context, focusing primarily on contextual factors that have a sustained rhythm, and investigating the impact of these factors on teacher information processing.

Thus, one important application of the South Bay Study is that it has contributed to the initial developmental stages of a potentially useful conceptualization of instructional context which may put educational researchers one step closer to the goal of conceptual clarity about the effects of context on teaching.

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Appendices

Appendix A

Coding for the Pupil Sort Task

A. "Standard" Categories Generated by Teachers

Categories that were used frequently by a number of teachers are called "standard" categories. They are subdivided into the category types listed below.

1. Ability/Achievement. Groupings that refer to academic potential or performance of pupils. Examples of labels from a variety of groupings coded in this category are: Motivated, high potential, going forward on a continuum; definitely retarded, many learning problems; very capable, producing at a high level; high ability; low, low ability.

2. Involvement in Instruction. Groupings that refer to pupil behaviors such as attentiveness, receptivity, talking to neighbors, keeping on task, and general participation in discussions or lesson activities. Examples of labels from a variety of groupings coded in this category are: need more of teacher's attention during lesson; quiet workers, may talk, but not disruptive; keep on task; teacher must keep very close contact with them; willing to accept instruction, to participate, not just passive.

3. Personality. Groupings that refer to affective characteristics such as amount of self-direction, amount of self-confidence, degree of positive self-image or happiness, and possession of an outgoing or shy nature. Examples of labels from a variety of groupings coded in this category are: self-confident; need spoon-feeding, mothering; happy, contented; quiet and shy; super-initiators; really happy with themselves.

4. Peer Relationships. Groupings that refer to friendship patterns, to social interaction among pupils, or to social status of pupils within the class. Examples of labels from a variety of groupings coded in this category are: pupils who are most caring about others in class; big buddies; all alone, an isolate; kids who like to work together; loners; much interaction between these pupils; most respected people in our class.

5. Activity Orientation. Groupings that refer to the task on which a pupil was working, or the pupil's response to a given task. Examples of labels from a variety of groupings coded in this category are: group working with teacher; group working on their own; good job of skimming to find information; could remember double consonant rule; didn't pass the written quiz; pupils engaged in task of their own choosing; worked systematically on the puzzle of words with short vowels.

6. Growth/Progress. Groupings that refer to a change in pupil skill or knowledge. Examples of labels from a variety of groupings coded in this category are: largest gain-makers; making important gains in reading skills, going by leaps; most progress in reading; greatly improved -- these kids stand out from all the rest; kids that grew a great deal more than teacher anticipated; showed fair amount of advancement from level where they were.

B. "Special" Categories Generated by Teachers

Categories that were used infrequently and do not fit readily into any of the standard category types listed above are called "special" categories. They are sub-divided into the types listed below.

1. Mixed Breeds. Groupings that contain sub-groups which are not discrete from each other, or which do not fit readily under a single overall label. An example of a Mixed Breed grouping is one that contains the following labels for subgroups: well behaved, willing, courteous; teacher watched them for problems; looked poor on sheets of information from prior teacher; tested system; bright; upset; expected shyness, but he wasn't; she hit teacher in stomach accidentally; didn't respond particularly.

2. Unique Labels. Groupings that refer to pupil characteristics that are attended to by only one teacher. Examples of labels from a variety of groupings coded in this category are: able to deal with abstractions; limited English; high in fine motor coordination; kids concerned about fairness to others; sports-minded pupils; conferences where teacher might get somewhere, parents will do something to help.

3. Singling Out. A sub-group consisting of a single pupil. Standard categories, mixed breeds, and unique labels can all contain one or more instances of singling pupils out.

C. Positive, Negative, and Neutral Labels

Labels attached to each sub-group of pupils are coded as positive, negative, or neutral according to the connotation that terms used in the label have in common usage. This does not imply that the teacher using the label necessarily thinks positively or negatively about the pupils so labeled.

1. Positive Labels. Examples of labels coded as having positive connotations in common usage are: very bright; bright, dependable helpers; very eager to participate; good job of stating two viewpoints; happy, contented; children who work independently, are self-directed, carry through on their own, seem mature; quite receptive; not introverts.

2. Negative Labels. Examples of labels coded as having negative connotations in common usage are: verbal skills below average for the group; almost infantile; erratic work and behavior; immature; concentrate on work poorly; followers - they are manipulated by the older ones; rock bottom - least progress expected; frail, weak, frightened.

3. Neutral Labels. Examples of labels coded as having neutral connotations in common usage are: average; sports-minded; middle range of self-directedness; fair, able to hold their own; didn't work with them this morning; know these pupils; kids who were working on their own, not with the teacher.

Appendix B

Patterns of Content in Teachers' Conceptions of Pupils

The general patterns of teacher thinking with regard to the content of their conceptions of pupils are reflected in this teacher's response to the pupil sort task.

Categories that this teacher used over the course of the year were:

1. September (first day) -- non-itiators, initiators, super-initiators;

2. November -- pupils who are happy with the work they're doing (and I agree), pupils who are happy with the work they're doing (but I still think they need a lot of work), pupils who are concerned about their academic work (but I think they have nothing to be concerned about), pupils who are concerned about their academic work (and I agree);

3. January -- pupils who were more involved in the lesson than usual, pupils who were attentive but didn't respond on their own as much as usual, pupils who had problems today (possibly it was my wording in explaining the task);

4. March -- pupils who were working on a task chosen by the teacher, pupils busily engaged in a task of their own choosing, pupils who eventually got to the task but had trouble getting started; and

5. June -- kids that grew or achieved a great deal more than I anticipated (either in behavior, academics, or socially), those who showed good progress, pupils that I haven't brought along as far as I'd like to have done.

The shift from a first-day focus on personality characteristics to an end-of-year focus on growth and progress is clear from these examples, as is the shift from a focus on general personality traits in the general observations (September and November) to a focus on engagement in a particular task or lesson in the specific observations (January and March). Throughout the year the theme of pupil independence and responsibility was repeated. This theme is consistent with teacher

105's curriculum-management system, in which pupils were given a set of assignments to complete during the week, but were provided with options as to the times at which they would work on those assignments. The particular organizational concepts which this teacher used in grouping pupils thus lend support to the thesis that teacher conceptions of pupils are embedded in the instructional context.

Appendix C

Patterns of Logical Structure in Teachers' Conceptions of Pupils

An examination of one teacher's responses to the pupil-sort task illustrates the general patterns found in logical structure of teachers' conceptions of pupils.

In September this teacher initated only one grouping of pupils. This was a mixed breed grouping in which the major descriptors were: they were well behaved, willing, courteous; I watched them for problems; or they looked "poor" on the preliminary data sheets. Seven pupils were singled out and described as not fitting into any group. The descriptors for these pupils were: he kicked up his heels and tested the system; she enlivened things today; I watched to see if he'd be resentful; he is unexpectedly bright; I expected him to be shy, but he wasn't; she hit me in the stomach accidentally; she just didn't respond particularly. In November this teacher initated three groupings. One of them was a unique label grouping where the descriptors were: parent conferences where I might get somewhere (some children will get a poor report, but their parents will do something to help, and other children are doing well); parent conferences where I won't get anywhere. In March this teacher initiated two groupings, both of which related to pupil ability and achievement. In June three groupings were initated, and all related to pupil involvement in instruction.

These groupings provide examples of the general pattern of teacher tendency to use more mixed breed and singling out categories in September, and to generate more unique label categories in November. The March and June responses are less typical, but in each case they illustrate use of a strong focus, with little variation in the concepts used to

organize the observations of pupils.

The curriculum-management system which this teacher attempted to install in the classroom never became fully functional, and management problems were a concern throughout the year. Thus the flow of information (in the form of pupils' verbal and physical behavior) the teacher had to process was never quite under control. This teacher's generally limited and rigid use of concepts may be the only form of teacher control that could be successfully exerted in this situation, in order to make information processing a manageable task. The logical structure of this teacher's responses to the pupil sort task thus provides a detailed example that is supportive of the thesis that teacher conceptions of pupils are responsive to the instructional context in which they are formed.

Appendix D

Patterns of Valence in Teachers' Conceptions of Pupils

The general pattern of valence in teacher responses to the pupil sort can be illustrated by examining one teachers' pupil groupings.

In September this teacher's first grouping included seven different groups of pupils. The descriptors were: mature, bright, high expectations, outgoing toward teacher and classroom; sweet, likeable, good reputation; better behaved than reputation predicted; unnoticed; needed discipline; and in a class by himself (a child who was singled out). Four of these labels were positive, one was neutral, and two were negative. Sixteen pupils were grouped under positive descriptors, eight under neutral descriptors, and four under negative descriptors.

In November one of this teacher's groupings included the following descriptors: children who work independently, are self-directed, carry through on their own, seem mature (10 pupils); children who are somewhat self-directed, but more dependent than first group (8 pupils); children who need a lot of teacher reinforcement (12 pupils). Even the lowest-rated children are described in neutral rather than negative terms here.

In January, one of this teacher's five groupings used similar types of labels: children who achieved more than usual (4); children who achieved about as usual (3); children I didn't work with, so I was only passively aware of them (10). Again, only positive and neutral labels were applied.

This teacher's final grouping in June was formed under the overall heading of "kids who've been behavior problems by degrees." Even here

the descriptors are not strongly negative. The labels used were: kids who seem to evoke a lot of negative responses on my part (4); kids who have evoked some negative responses, but mostly positive -- they're more neutral (9); kids who I respond to in a mostly postive way (15).

These responses illustrate the generally positive tone of teachers' descriptions of pupils, and also illustrate the general pattern of slight shifts toward increased use of neutral labels over time. The stability of this teacher's general pattern of labeling over all interviews illustrates the fact that the valence of teacher responses to the pupil sort task was less responsive to the contextual factors of time of year, observational settings, and curriculum-management system than the other aspects of teacher conceptions of pupils.

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